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PATENT

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Present Application

Applicants : Kenneth H. Abbott et al.
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For : MANAGING INTERACTIONS BETWEEN COMPUTER
USERS' CONTEXT MODELS
Docket No. : 294438020US2

Prior Application

Application No. : 09/724,894
Confirmation No. : 7810
Filed : November 28, 2000
Art Unit : 2152

Commissioner for Patents
Washington, DC 20231

PRELIMINARY AMENDMENT

Sir:

Please amend the application as follows:

In the Specification:

Please replace the paragraphs beginning at lines 4 and 11 of page 1 with the following paragraphs, respectively.

This application is a continuation of U.S. Patent Application No. 09/724,894, filed November 28, 2000 and currently pending. U.S. Patent Application

No. 09/724,894 is a continuation-in-part of U.S. Patent Application No. 09/216,193, entitled "METHOD AND SYSTEM FOR CONTROLLING PRESENTATION OF INFORMATION TO A USER BASED ON THE USER'S CONDITION" and filed December 18, 1998, and a continuation-in-part of U.S. Patent Application No. 09/464,659, entitled "STORING AND RECALLING INFORMATION TO AUGMENT HUMAN MEMORIES" and filed December 15, 1999, both of which are hereby incorporated by reference in their entirety.

U.S. Patent Application No. 09/724,894 also claims the benefit of provisional U.S. Patent Application No. 60/194,004 (Attorney Docket No. 294438020US), entitled "MANAGING INTERACTIONS BETWEEN COMPUTER USERS' CONTEXT MODELS" and filed April 2, 2000, and of provisional U.S. Patent Application No. 60/193,999 (Attorney Docket No. 294438008US) entitled "OBTAINING AND USING CONTEXTUAL DATA FOR SELECTED TASKS OR SCENARIOS, SUCH AS FOR A WEARABLE PERSONAL COMPUTER" and filed April 2, 2000, both of which are hereby incorporated by reference in their entirety.

In the Claims:

Please cancel claims 1-50, 54, 56 and 63-65.

Please substitute the following amended claims for the corresponding pending claims:

51. (Amended) A method in a portable computer for providing information about a context that is modeled with multiple context attributes, the method comprising:

receiving from each of multiple sources an indication of an ability to supply values for at least one of the context attributes of the modeled context; and

for each of multiple clients,

receiving an indication of a desire to receive information of interest;

when at least one source is determined to have the ability to supply the indicated information, retrieving the indicated information from at least one of those sources and sending the retrieved information to the client; and

when none of the sources have the ability to supply the indicated information,

determining one or more resources of other accessible computers with which the indicated information can be obtained;

obtaining the indicated information with the determined resources; and

sending the obtained indicated information to the client.

59. (Amended) The method of claim 51 wherein the context attributes represent information about the portable computer.

60. (Amended) The method of claim 51 wherein the context attributes represent information about a group of users such that each of the users is a user of one of the other accessible computers.

61. (Amended) The method of claim 51 wherein the context attributes represent information about the group of other accessible computers.

Please add the following claims:

66. (New) The method of claim 51 wherein each of the sources are modules executing on the portable computer or are devices of the portable computer.

67. (New) The method of claim 51 wherein each of the clients are modules executing on the portable computer.

68. (New) The method of claim 51 wherein the information of interest is a value of one of the context attributes.

69. (New) The method of claim 51 wherein the received indication of the ability to supply values from each of the multiple sources is a registration message from that source.

70. (New) The method of claim 51 wherein the received indication of the desire to receive information of interest from each of the multiple clients is a registration message from that client.

71. (New) The method of claim 51 including verifying security information for each of the resources before the obtaining of the indicated information with those determined resources.

72. (New) The method of claim 51 including verifying security information for each of the resources before supplying indicated information obtained from that resource to one of the clients.

73. (New) The method of claim 51 wherein the sending of the obtained indicated information to the client includes sending the obtained information to an output device of a computing device for the client such that the obtained information will be presented via the output device.

74. (New) A computer-readable medium containing instructions that when executed cause a computing device to provide information about a context that is modeled with multiple context attributes, by performing a method comprising:

for each of multiple clients,

receiving an indication of a desire to receive information of interest;

when at least one source is determined to have an ability to supply the indicated information, receiving the indicated information from at least one of those sources and sending the received information to the client; and

when the indicated information is not received from at least one of the sources,

determining one or more resources of other accessible computers with which the indicated information can be obtained;

obtaining the indicated information with the determined resources; and

sending the obtained indicated information to the client.

75. (New) A portable computer for providing information about a context that is represented with multiple modeled attributes, comprising:

an attribute mapping module that is capable of receiving from each of multiple sources an indication of a current ability to supply values for at least one of the context attributes of the modeled context; and

an information supplier module that is capable of receiving an indication of a desire to receive information of interest from a client, of receiving the indicated information of interest from a source when at least one source has the ability to supply the indicated information of interest and sending the received information to the client, and of, when none of the sources have the ability to supply the indicated information of interest, determining one or more resources of other accessible computers with which the indicated information of interest can be obtained, obtaining the indicated information of interest with the determined resources, and sending the obtained indicated information of interest to the client.

76. (New) A method in a wearable computer for an executing user characterization system to provide information about a current state of a user of the wearable computer, the user characterization system modeling the current state with multiple state attributes and including state server modules (SSMs) to supply values for the

state attributes, state client modules (SCMs) to process values for the state attributes, and an intermediary module to facilitate exchange of state attribute values, comprising:

under control of each SSM, generating values for at least one of the state attributes and sending the generated values to the intermediary module;

under control of each SCM, receiving values for at least one state attribute from the intermediary module and performing processing based on the received values;

under control of the intermediary module, facilitating exchange of values by, receiving values for the state attributes from SSMs and from a first of multiple other characterization systems, each of the other characterization systems executing on another computer to model a current state related to the another computer;

receiving requests for values of indicated state attributes from SCMs and from a second of the other characterization systems;

sending values of the indicated state attributes to the SCMs and the second other characterization system; and

accessing functionality of a remote resource that is available to one of the other characterization systems executing on another computer by,

receiving a request related to access to the functionality of the resource;

requesting the one other characterization system to provide the access; and

after the one other characterization system provides the access, accessing the functionality of the resource,

so that the user characterization system can interact with other characterization systems in order to exchange state information of interest and access functionality of remote resources.

77. (New) The method of claim 76 wherein the resource is processing capabilities of the another computer, wherein the accessing of the functionality of the resource includes use of the processing capabilities on behalf of the user characterization

system, and including receiving an indication of results of the use of the processing capabilities.

78. (New) The method of claim 76 wherein the resource is an input device of the another computer, and wherein the accessing of the functionality of the resource includes receiving input information from the input device.

79. (New) The method of claim 76 wherein the accessing of the functionality of the resource includes retrieving information used during the executing of the one other characterization system.

80. (New) The method of claim 76 wherein the resource is a sensor of another computer that is receiving information about the user of the wearable computer, and wherein the accessing of the functionality of the resource includes obtaining information about the user of the wearable computer that is received by the sensor.

81. (New) The method of claim 76 wherein the resource is an output device of another computer that is perceivable by the user of the wearable computer, and wherein the accessing of the functionality of the resource includes presenting information to the user on the output device.

82. (New) The method of claim 76 wherein the accessing of the functionality of the resource is performed to receive values of at least one of the state attributes.

83. (New) The method of claim 76 wherein the accessing of the functionality of the resource is performed to send values of at least one of the state attributes.

84. (New) The method of claim 76 wherein the received request is for the functionality of the resource.

85. (New) The method of claim 84 wherein the received request is for a value of an indicated state attribute, and wherein the accessing of the functionality of the resource includes obtaining the requested value.

86. (New) The method of claim 76 including accessing multiple remote resources to obtain distributed state information.

87. (New) The method of claim 86 including modeling an aspect of the current state using the distributed state information.

88. (New) The method of claim 76 including, after the accessing of the functionality of the resource, responding to the received request related to the access.

89. (New) The method of claim 76 wherein at least some of the SSMs are available to supply values for additional state attributes of a current state other than for the user, and wherein the intermediary module additionally sends values for the additional state attributes to SCMs based on indications from those SCMs of a current desire to receive values for at least one of the additional state attributes.

90. (New) A method in a first computer for providing information about a current state that is represented with multiple attributes, the method comprising:

receiving indications of multiple characterization modules that each model a current state related to a computer on which that characterization module executes, each modeled current state represented with at least one attribute;

determining a need for access to a resource accessible to one of the computers on which one of the characterization modules is executing; and

using the one characterization module to access the resource.

91. (New) The method of claim 90 wherein the determining of the need for access to the resource is based on receiving a request related to the access.

92. (New) The method of claim 90 wherein the need for access to the resource is based on obtaining functionality provided by the resource.

93. (New) The method of claim 90 wherein the resource is processing capabilities of the one computer, and wherein the accessing of the resource includes use of the processing capabilities.

94. (New) The method of claim 90 wherein the resource is an input device of the one computer, and wherein the accessing of the resource includes receiving input information from the input device.

95. (New) The method of claim 90 wherein the resource is an output device of the one computer, and wherein the accessing of the resource includes presenting output information via the output device.

96. (New) The method of claim 90 wherein the resource is information used during the executing of the one characterization module, and wherein the accessing of the resource includes retrieving the information.

97. (New) The method of claim 90 wherein the resource is a sensor of a computer distinct from the first computer that is receiving information about a user of the first computer, and wherein the accessing of the resource includes obtaining information about the user that is received by the sensor.

98. (New) The method of claim 90 wherein the resource is an output device of a computer distinct from the first computer that is perceivable by a user of the

first computer, and wherein the accessing of the resource includes presenting information to the user on the output device.

99. (New) The method of claim 90 wherein the received indications of the multiple characterization modules are registration messages from each of the multiple characterization modules that indicate attributes that represent the current state modeled by that characterization module.

100. (New) The method of claim 90 wherein the accessing of the resource is performed to send values of at least one of the attributes to the one characterization module.

101. (New) The method of claim 90 including accessing multiple remote resources to obtain distributed state information.

102. (New) The method of claim 101 including modeling an aspect of the current state using the distributed state information.

103. (New) The method of claim 90 wherein at least some of the multiple attributes represent information about a user of the first computer.

104. (New) The method of claim 103 wherein the represented information reflects a modeled mental state of the user.

105. (New) The method of claim 90 wherein at least some of the multiple attributes represent information about the first computer.

106. (New) The method of claim 90 wherein at least some of the multiple attributes represent information about a physical environment of a user of the first computer.

107. (New) The method of claim 90 wherein at least some of the multiple attributes represent information about a cyber-environment of a user of the first computer.

108. (New) The method of claim 90 wherein at least some of the multiple attributes represent a current prediction about a future state.

109. (New) The method of claim 90 wherein at least some of the multiple attributes represent information about a group of users such that each of the users is a user of a computer on which one of the multiple characterization modules is executing.

110. (New) The method of claim 90 wherein at least some of the multiple attributes represent information about the group of computers on which the multiple characterization modules are executing.

111. (New) The method of claim 90 wherein at least some of the multiple attributes represent information about a physical environment common to the computers on which the multiple characterization modules are executing.

112. (New) The method of claim 90 wherein at least some of the multiple attributes represent information about a cyber-environment common to the computers on which the multiple characterization modules are executing.

113. (New) The method of claim 90 wherein security information must be received for the one characterization module before that characterization module is used to access the resource.

114. (New) The method of claim 90 wherein security information must be supplied to the one characterization module before that characterization module is used to access the resource.

115. (New) The method of claim 90 wherein the using of the one characterization module to access the resource includes requesting the one characterization module to access the resource on behalf of a module performing the method.

116. (New) The method of claim 90 wherein the using of the one characterization module to access the resource includes requesting the one characterization module to provide information obtained from the resource.

117. (New) The method of claim 90 wherein the using of the one characterization module to access the resource includes requesting the one characterization module to provide information to the resource.

118. (New) The method of claim 90 wherein the using of the one characterization module to access the resource includes requesting the one characterization module to provide access information for the resource, and including accessing the resource using the provided access information.

119. (New) The method of claim 90 wherein the accessing of the resource includes obtaining a value of at least one of the attributes that represent the current state modeled by the one characterization module.

120. (New) The method of claim 119 including providing the obtained value to a client.

121. (New) The method of claim 119 including providing the obtained value to another of the characterization modules.

122. (New) The method of claim 90 including using information obtained from the accessing of the resource to provide functionality to clients.

123. (New) The method of claim 90 including providing information obtained from the accessing of the resource to clients.

124. (New) The method of claim 90 including receiving values of the attributes from sources and providing values of the attributes to clients.

125. (New) The method of claim 124 wherein at least some of the sources are the characterization modules.

126. (New) The method of claim 124 wherein at least some of the clients are the characterization modules.

127. (New) A computer-readable medium whose contents cause a computing device to provide information about a state that is represented with multiple attributes, by performing a method comprising:

determining multiple modules that each model a state related to a computer on which that module executes, each modeled state represented with at least one attribute;

accessing a resource using one of the modules that is executing on a computer having access to the resource; and

using information from the accessing of the resource to provide functionality or information to a client.

128. (New) The computer-readable medium of claim 127 wherein the computer-readable medium is a memory of the computing device.

129. (New) The computer-readable medium of claim 127 wherein the computer-readable medium is a data transmission medium transmitting a generated data signal containing the contents.

130. (New) A computing device for providing information about a current state that is represented with multiple attributes, comprising:

an input module that is capable of receiving indications of multiple characterization modules that each model a current state related to a computer on which that characterization module executes, each modeled current state represented with at least one attribute; and

a resource access module that is capable of determining a need for access to a resource accessible to one of the computers on which one of the characterization modules is executing and of accessing the resource via the one characterization module.

131. (New) A computing device for providing information about a current state that is represented with multiple attributes, comprising:


means for receiving indications of multiple characterization modules that each model a current state related to a computer on which that characterization module executes, each modeled current state represented with at least one attribute;

means for determining a need for access to a resource accessible to one of the computers on which one of the characterization modules is executing; and

means for accessing the resource via the one characterization module.

REMARKS

Applicants have amended claims 51 and 59-61, and have added claims 66-131 in order to clarify the subject matter of their invention. Applicants have also canceled claims 1-50, 54, 56 and 63-65. Thus, claims 51-53, 55, 57-62 and 66-131 are now pending.


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APPENDIX – SPECIFICATION
MARKED TO SHOW CHANGES

Paragraphs beginning at Page 1, lines 4 and 11, respectively:

This application is a continuation of U.S. Patent Application No. 09/724,894, filed November 28, 2000 and currently pending. U.S. Patent Application No. 09/724,894 [This application] is a continuation-in-part of U.S. Patent Application No. 09/216,193, entitled “METHOD AND SYSTEM FOR CONTROLLING PRESENTATION OF INFORMATION TO A USER BASED ON THE USER’S CONDITION” and filed December 18, 1998, and a continuation-in-part of U.S. Patent Application No. 09/464,659, entitled “STORING AND RECALLING INFORMATION TO AUGMENT HUMAN MEMORIES” and filed December 15, 1999, both of which [. Both of these applications] are hereby incorporated by reference in their entirety.

U.S. Patent Application No. 09/724,894 [This application] also claims the benefit of provisional U.S. Patent Application No. 60/194,004 (Attorney Docket No. 294438020US), entitled “MANAGING INTERACTIONS BETWEEN COMPUTER USERS’ CONTEXT MODELS” and filed April 2, 2000, and of provisional U.S. Patent Application No. 60/193,999 (Attorney Docket No. 294438008US) entitled “OBTAINING AND USING CONTEXTUAL DATA FOR SELECTED TASKS OR SCENARIOS, SUCH AS FOR A WEARABLE PERSONAL COMPUTER” and filed April 2, 2000, both of which are [. These applications are both] hereby incorporated by reference in their entirety.

APPENDIX – CLAIMS

MARKED TO SHOW CHANGES

51. (Amended) A method in a portable computer for providing information about a context that is modeled with multiple context attributes, the method comprising:

receiving from each of multiple sources an indication of an ability to supply values for at least one of the context attributes of the modeled context; and

for each of multiple clients,

receiving an indication of a desire to receive information of interest;

when at least one source is determined to have the ability to supply the indicated information, retrieving the indicated information from at least one of those sources and sending the retrieved information to the client; and

when none of the sources have the ability to supply the indicated information,

~~determining one or more executing characterization modules from which the indicated information can be obtained and/or one or more resources of other accessible computers with which the indicated information can be obtained;~~

~~obtaining the indicated information from the determined characterization modules and/or with the determined resources; and~~

sending the obtained indicated information to the client.

59. (Amended) The method of claim 51 wherein the context attributes represent information about the ~~first portable~~ computer.

60. (Amended) The method of claim 51 wherein the context attributes represent information about a group of users such that each of the users is a user of one of the other accessible computers ~~a computer on which one of the multiple determined characterization modules is executing.~~

61. (Amended) The method of claim 51 wherein the context attributes represent information about the group of other accessible computers ~~on which the multiple determined characterization modules are executing.~~